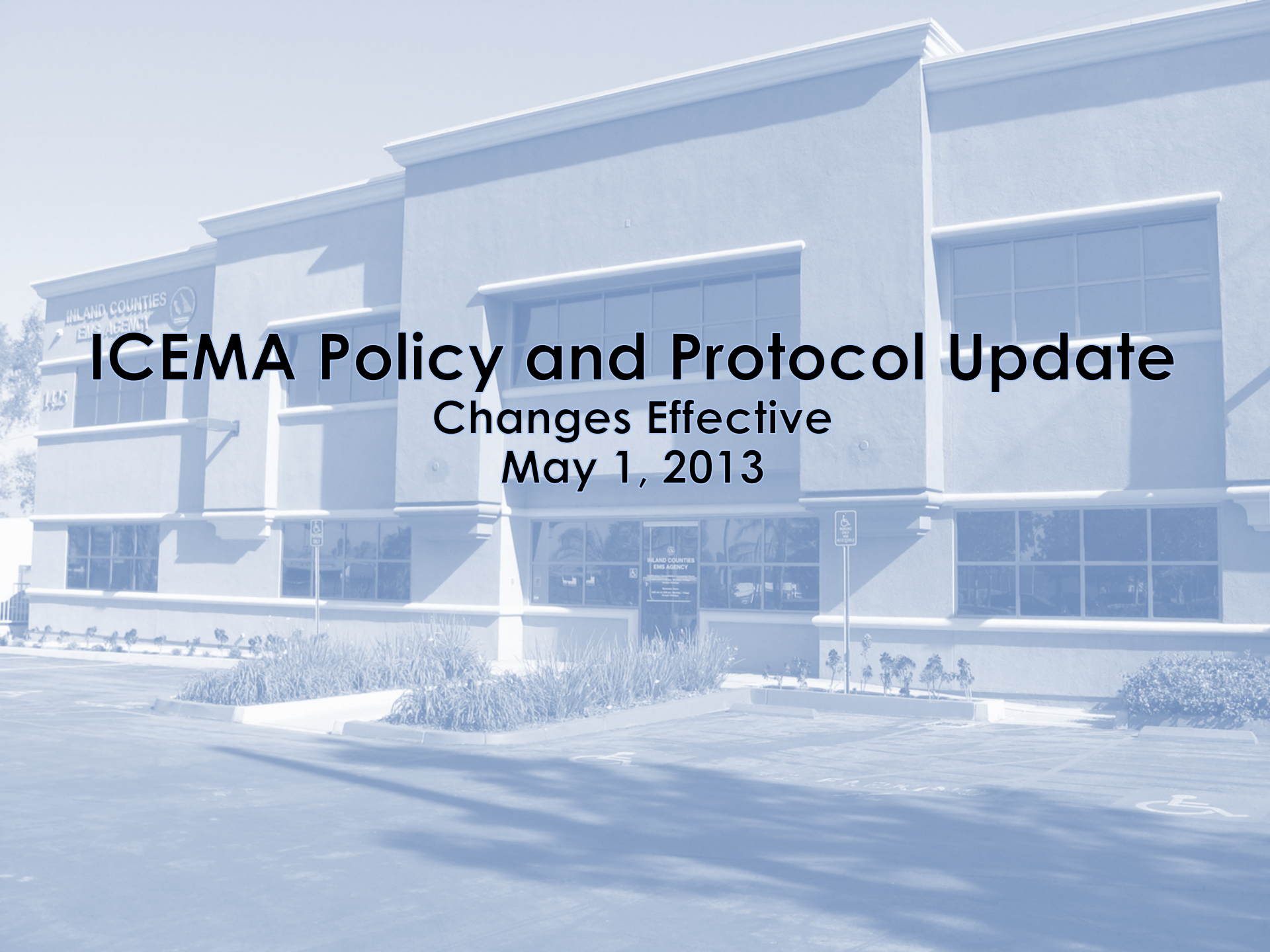

ICEMA Policy and Protocol Update

Changes Effective
May 1, 2013

Objectives

- Review changes to current policy and protocols effective May 1, 2013
- Provide training and evaluation for current and new policies and protocols
- Introduce Dextrose dosing addition for neonates
- Changes to Midazolam dosing for adults and pediatrics

Dextrose Dose Changes

- **Dextrose – Pediatric (LALS, ALS)**

  For neonates (0-4 weeks), if blood glucose < 35 mg/dL

  Dextrose 25% (0.25 g/ml) Diluted 1:1, give 0.5 g/kg (4ml/kg) IV/IO

  - Change made to reduce the chance of hyperosmotic fluid shifts in neonates
  - Hyperosmolar syndrome resulting from rapid administration of concentrated dextrose may cause hypovolemia, dehydration, mental confusion and loss of consciousness
  - In neonates, high dextrose concentrations may result in hyper osmolality and possible intracerebral hemorrhage

Midazolam Dose Change

Midazolam – Pediatric (ALS)

Seizures

- Midazolam 0.1 mg/kg IV/IO with maximum dose 2.5mg. May repeat Midazolam in five (5) minutes. Do not to exceed adult dosage, or
- Midazolam 0.2 mg/kg IM/IN with maximum dose of 5 mg. May repeat Midazolam in ten (10) minutes for continued seizure. Do not to exceed adult dosage.
- Assess patient for medication related reduced respiratory rate or hypotension
- Maximum of three (3) doses using any combination of IM/IN/IV/IO may be given for continued seizure activity. Contact Base Station for additional orders and to discuss further treatment options.

Midazolam Dose - Adult

Midazolam - Adult (ALS)

(Seizure)

- Midazolam, 2.5 mg IN/IV/IO. May repeat in five (5) minutes for continued seizure activity, or
- Midazolam 5 mg IM. May repeat in ten (10) minutes for continued seizure activity
- Assess patient for medication related reduced respiratory rate or hypotension
- Maximum of three (3) doses using any combination of IM/IN/IV/IO may be given for continued seizure activity. Contact Base Station for additional orders and to discuss further treatment options.

Policies and Protocols

- *The following protocols have changes in the dosages of Midazolam and/or Dextrose*

- 11080 Altered Level of Consciousness
- 13020 Heat Related Emergencies
- 13030 Altered Level of Consciousness - Adult
- 14050 Altered Level of Consciousness - Pediatric
- 14060 Seizures – Pediatric
- 14080 Obstetrical Emergencies

Altered Level of Consciousness/Seizures – Adult
ICEMA Reference 11080

- Establishes field assessment and treatment indicators for adult patients with ALOC and Seizures
- Changes
  - Added Limited-ALS interventions
  - Midazolam dosing and interventional criteria changes
  - **If interventions are unsuccessful after three doses, contact base physician to discuss treatment options**

Heat Related Emergencies
ICEMA Reference 13020

- Establishes field assessment and treatment indicators for Heat Related Emergencies
- Changes
  - Added Limited ALS interventions
  - Adult LALS
    - Fluid bolus of 500cc NS repeat if continued signs of inadequate tissue perfusion
  - Pediatric LALS (under 9)
    - Initial 20cc/kg IV Bolus repeat for continued signs of inadequate tissue perfusion

Heat Related Emergencies
Continued

- Midazolam dosing and interventional criteria changes
- Does not limit dose to a single route
- Maximum of three doses using any route
- Monitor patient for reduced respiratory rate or hypotension
- **If interventions are unsuccessful after three doses, contact base physician to discuss treatment options**

Cold Related Emergencies
ICEMA Reference 13030

- Establishes field assessment and treatment indicators for Cold Related Emergencies
- Changes
  - Added Limited-ALS interventions
  - Added dosing for Dextrose

Altered Level of Consciousness – Pediatric
ICEMA Reference 14050

- Establishes field assessment and treatment indicators for ALOC in Pediatric patients
  - Changes
    - Added LALS interventions
    - Added neonate Dextrose dilution to prevent hyperosmotic fluid shifts

Seizure – Pediatric
ICEMA Reference 14060

- Establishes field assessment and treatment indicators for Seizures in Pediatric patients
  - Changes
    - Added LALS interventions
    - Added Dextrose and neonate dilution to prevent hyperosmotic fluid shifts

Seizure – Pediatric
Continued

- Midazolam dosing and interventional criteria changes
- Does not limit dose to a single route
- Maximum of three doses using any route
- Monitor patient for reduced respiratory rate or hypotension
- **If interventions are unsuccessful after three doses, contact base physician to discuss treatment options**

Obstetrical Emergencies

ICEMA Reference 14080

- Establishes field assessment and treatment indicators for Obstetrical Emergencies
- Changes
  - Use of Magnesium Sulfate for Pregnancy Induced Hypertension removed
  - Magnesium Sulfate (MgSO4) remains a treatment for active seizures in pregnancy
  - Magnesium and Midazolam removed from Base Station and Radio Communication failure

Obstetrical Emergencies
Continued

- Midazolam Dose Changes
  - 2.5 mg IV/IO repeat in 5 minutes for a maximum dose of 5mg IV/IO
  - 5mg IM may repeat in 5 minutes for a maximum dose of 10mg IM
  - Base Station may order Dopamine infusion at 400 mg in 250 ml NS titrated between 5-20mcg/kg/min to maintain adequate tissue perfusion

Evaluation

1. According to ICEMA Reference #11080 *Altered Level of Consciousness/Seizures – Adult*, the correct dose of Midazolam for a tonic/clonic type seizure in an adult is:
    a. Midazolam 2.5 mg IN/IV/IO or Midazolam 5 mg IM
    b. Midazolam 5 mg IM then 2.5 mg IV after establishing an IV
    c. Midazolam 5-10 mg IM or 2.5-5 mg IV/IO/IN
    d. None of the above
2. According to ICEMA Reference #11080 *Altered Level of Consciousness/Seizures—Adult*, the dose of Midazolam may be repeated using **any route** during the treatment of the patient. How many times may Midazolam be given prior to making base station contact?
    a. Three
    b. Once
    c. Twice
    d. None
3. While administering Midazolam, according to ICMEA protocols, the patient should be monitored for reduced respiratory rate or hypotension.
    a. True
    b. False
4. The primary purpose for making base contact after administering the maximum number of doses of Midazolam in the ICEMA protocols is to
    a. Discuss treatment options
    b. Discuss patient condition
    c. Discuss additional orders
    d. All of the above
5. According to ICEMA Reference 13020 Heat Related Emergencies, Midazolam may be given for tonic/clonic type seizures. If an initial dose of Midazolam is given IM, which of the following statements is correct?
    a. May repeat in 10 minutes using only the IM route for continued seizure activity
    b. May repeat after 5 minutes, same as for IN/IV/IO
    c. May repeat using any route (IM/IN/IV/IO) after 10 minutes for continued seizure activity.
    d. None of the above

Evaluation Continued

6. According to ICEMA Reference #14060 *Seizure - Pediatric*, Midazolam may be given for tonic/clonic type seizures. The dosage may be repeated for continued seizure activity but must not exceed
    a. 10mg IM for the second dose
    b. Regardless of route, the maximum combined dose must not exceed the adult dose
    c. Three separate doses
    d. B and C only
7. Dextrose treatment for neonates (0-4) weeks old with blood glucose < 60 mg/dL was added to ICEMA Reference #14060. A primary concern in diluting the solution with additional fluid is to reduce the chance of hyperosmotic fluid shifts in this population.
    a. True
    b. False
8. According to ICEMA Reference #14080 *Obstetrical Emergencies,* the following should be provided for Pregnancy Induced Hypertension without seizure **except**:
    a. Maintain IV rate at TKO, limit fluid intake
    b. Obtain rhythm strip with copy to receiving hospital
    c. Administer Magnesium Sulfate if patient is hypertensive (150/100 or greater) 4 gms in 100 cc of NS at 30cc hour to prevent seizures
    d. Place in left lateral position and obtain B/P after five (5) minutes.
9. According to ICEMA Reference #14080 *Obstetrical Emergencies*, Magnesium Sulfate may be given to a patient with tonic/clonic activity. The correct initial loading dose is
    a. Magnesium Sulfate 4 gms diluted with 20 ml NS, IV/IO over 3-4 minutes
    b. Magnesium Sulfate 4 gms diluted in 100 cc of NS, IV/IO over 3-4 minutes
    c. Magnesium Sulfate 4 gms diluted with 20ml of NS, rapid IV/IO push
    d. Magnesium Sulfate may not be used in the ICEMA region for pregnancy induced seizures